

**CLAIMS**

1. Resistor array comprising N lines of commands  $N_i$ , with i being a strictly positive integer, M columns of commands  $M_j$ , with j being a strictly positive integer, and NM resistors  $R_{ij}$ , each resistor  $R_{ij}$  being commanded by the line  $N_i$  and the column  $M_j$ , characterised in that at least one of the resistors has a negative thermal coefficient resistance and is associated with a thermally activatable component.

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2. Array according to claim 1, characterised in that each resistor  $R_{ij}$  is associated with a thermally activatable component.

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3. Array according to one of claims 1 or 2, wherein at least one of the activatable components is a microvalve.

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4. Array according to one of claims 1 to 3, wherein all of the resistors  $R_{ij}$  have negative thermal coefficient resistances.

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5. Array according to one of claims 1 to 4, characterised in that at least one of the negative thermal coefficient resistors is made of a single material.

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6. Array according to claim 4, characterised in that all of the negative thermal coefficient resistors are made of a single material.

7. Array according to one of claims 1 to 6, characterised in that all of the resistors are identical.

5 8. Array according to one of the previous claims, wherein the negative thermal coefficient resistor includes tantalum nitride, a nickel-chromium alloy, or a nitride from refractory material.

10 9. Array according to one of the previous claims, wherein the negative thermal coefficient resistor has a temperature coefficient of between -100 and -3000 ppm/ $^{\circ}$ C.

15 10. Array according to any one of claims 1 to 9, characterised in that the material used for at least one line and/or at least one column has a positive thermal coefficient resistance.

20 11. Array according to claim 10, characterised in that all of the lines and/or all of the columns are made of a material with a positive thermal coefficient resistance.

25 12. Array according to one of claims 1 to 11, characterised in that all of the lines and all of the columns are made of the same material.

30 13. Array according to one of claims 1 to 12, which is associated with an insulating substrate.

14. Array according to one of the previous claims, also including means for adjusting the time for which a command voltage is applied to at least one of the resistors  $R_{ij}$ , in particular to each resistor  $R_{ij}$ ,  
5 so as to obtain the desired output.

15. Method for producing a resistor array, wherein at least one of the resistors is obtained by placing a resistive material (16), of which the  
10 resistance has a negative thermal coefficient, on a substrate (10) and including the association of this resistor with a thermally-activatable component.

16. Production method according to claim 15,  
15 including the deposition of the resistive material by cathode sputtering.

17. Production method according to one of claims 15 or 16, including the deposition of a  
20 conductive material (12) on the substrate (10) so as to form lines (14) before the resistive material is deposited.

18. Production method according to one of claims 15 to 17, including the deposition of a conductive material (12) so as to form columns (24)  
25 after the resistive material has been deposited.

19. Method according to one of claims 15 to 30, including a step of depositing a material (20) insulating the lines from the columns on said substrate.

20. Method according to one of claims 17 to 19, including the choice of a material of which the resistance has a positive thermal coefficient for the lines and/or columns.

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21. Method according to one of claims 15 to 20, including the association of the array with a microvalve array.

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22. Device for biological use, including an array according to one of claims 1 to 14, associated with a microfluidic array.